

I. SCOPE OF SOLICITATION

INTRODUCTION

The South Carolina Law Enforcement Division (SLED) is seeking to purchase a fourier transform infrared (FT-IR) spectrometer system for use in identifying controlled substances. The new FTIR system will be furnished, delivered, and installed by the offeror awarded the contract from this solicitation.

III. SCOPE OF WORK/SPECIFICATIONS

APPLICATION

The South Carolina Law Enforcement Division (SLED) is seeking to purchase one (1) fourier transform infrared (FT-IR) spectrometer system for use in identifying controlled substances. Offeror's proposed equipment must meet or exceed all technical specifications listed below.

TECHNICAL SPECIFICATIONS

Instrument specifications for FTIR system

Bench space is critical. Instrument dimensions will be considered as part of the selection criteria.

The quotation should include the following specifications:

1. A FT-IR Spectrometer system with the following specifications:
 - Integrated diamond attenuated total reflectance (ATR) interface with 5 year warranty on ATR crystal
 - The pressure tower must come standard with clutch-performance-calibrated mechanism, to provide consistent and uniform spectral results. The pressure tower heads must be exchangeable with various tips to fit different types of samples.
 - The analyzer must be a sealed and desiccated spectrometer to prevent moisture damage to the internal optical components. The spectrometer should be equipped with CaF₂ coated KBr sample compartment protection windows. The desiccant canister must be rechargeable and accessible with no need to open the spectrometer. This system should have a humidity indicator and have an optional purge operation.
 - The Interferometer must be a dynamically aligned, frictionless Michelson design. The interferometer should be capable of spectral resolution better than 0.4 cm⁻¹ (not apodized-boxcar) and the spectrometer must have a motorized aperture at the source for optimal peak shape collection of data. The instrument must be capable of at least 30,000:1 peak to peak signal to noise, measured at 4 cm⁻¹ resolution in the region 2200-2100 cm⁻¹
 - 4 cm⁻¹ spectral resolution at room temperature
 - Spectral Range of 4000-350 cm⁻¹
 - Peak frequency shift of less than 3 cm⁻¹ when compared to NIST polystyrene standard
 - The analyzer must have an integrated manual pressure applicator mechanism calibrated to adjust to sample thickness or hardness allowing solids and powders to properly adhere to the diamond ATR surface for accurate sample analysis.
 - The source must be externally mounted and accessible without removing the instrument cover and must have the option for a second source (Tungsten Halogen NIR source) stored in the instrument with no need to open the cover. The source exchange must be achieved externally for quick configuration in the medium or near IR range.

- The spectrometer must include a Performance Validation motorized wheel. The wheel must provide beam attenuation filters, NG-11 glass for detector linearity test and NIST-traceable 1.5 mil polystyrene film. The validation wheel must be serialized and labeled with expiration date information.
- The system must provide an optional external beam for additional sampling modules or infrared microscope capability.
- Laptop controller with preloaded software and color printer for generating data.
- SOP Workflows for software execution
- Software must include System performance Verification
- Software must include multicomponent search for identification of mixtures in liquid, solid or gas phase, for up to four independent components. The software must provide the relative contribution of each compound in the mixture and generate a synthetic spectrum overlaid to the searched unknown spectrum.
- Software that allows library search and comparison, spectral overlay, report generation/customization
- Database/library created using the same interface for high probability matching
- Computer should be capable of being networked to Department system for long-term storage and archiving, capable of being linked to LIMS system.
- Color laser printer should be included for printing spectra.

2. Delivery and installation

- a. Quote should include all associated costs for shipping, insurance, delivery and installation of all instruments in described package

3. Onsite and factory training to cover specified instrument

- a. Onsite orientation and operation training at installation
- b. Additional factory training in FT-IR systems for two individuals provided at manufacturer's location to cover operational, application, maintenance and advanced techniques in FT-IR spectrometry.

4. Support

- One year full warranty and extended three (3) year service warranty for a total of four (4) years to cover:
- Free software updates.
- All parts and labor to repair system in the event of a malfunction.
- Free loaner (Delivered by Overnight Carrier) if system malfunctions and should require more than one week factory repair time.
- Protective case/packaging for shipping
- Access to technical support

DELIVERY

Contractor shall ensure that its FT-IR Spectrometer systems are delivered, installed, operator familiarization completed no later than 6/30/2010.